

What is claimed:

1. A truss shoe for use on a mine roof truss having at least one inclined bolt and at least one horizontal bolt, the truss shoe comprising:

5 a base, the base including a first end, a second end, a first side and a second side extending between the first and second ends, a generally planar bearing surface, and a top side disposed opposite the bearing surface, the bearing surface arranged for contact with the mine roof;

10 a stanchion formed on the top side, the stanchion including a bore extending from a top end of the stanchion through the bearing surface, the bore sized to receive the inclined bolt;

a bracket formed on the top side, the bracket including a laterally extending slotted bore sized to receive the horizontal bolt; and

a portion of the first end and a portion of the first side cooperating to form a curved edge.

15 2. The truss shoe of claim 1, wherein the top end of the stanchion includes a recessed seat.

3. The truss shoe of claim 2, wherein the seat is generally conical.

4. The truss shoe of claim 2, wherein the seat is generally spherical.

20 5. The truss shoe of claim 1, wherein the bore of the stanchion is disposed at an angle relative to a plane of the bearing surface.

6. The truss shoe of claim 5, wherein the slotted bore of the bracket includes an axis disposed generally parallel to the plane of the bearing surface.

7. The truss shoe of claim 6, wherein the slotted bore of the bracket is generally J-shaped.

8. The truss shoe of claim 7, wherein the slotted bore of the bracket includes a recessed seat.

9. The truss shoe of claim 8, wherein the seat of the slotted bore is generally spherical.

5 10. The truss shoe of claim 6, wherein the slotted bore includes a retaining lip.

11. The truss shoe of claim 1, wherein the bore of the stanchion terminates in a slot formed on the bearing surface.

10 12. A truss shoe for use on a mine roof truss having at least one inclined bolt and at least one horizontal bolt, the truss shoe comprising:

a base, the base including a first end, a second end, a curved side, a generally planar bearing surface, and a top side disposed opposite the bearing surface, the bearing surface arranged for contact with the mine roof;

15 a stanchion formed on the top side, the stanchion including an angled bore having a top end and a bottom end, the bottom end of the bore extending through the bearing surface, the bore sized and positioned to receive the inclined bolt; and

a slotted retaining bracket formed on the top side and spaced away from the stanchion, the slotted retaining bracket sized to receive the horizontal bolt.

20 13. The truss shoe of claim 12, wherein the top end of the angled bore includes a recessed seat.

14. The truss shoe of claim 13, wherein the lower end of the angled bore terminates in a slot formed on the bearing surface.

25 15. The truss shoe of claim 12, wherein the slotted retaining bracket includes a recessed seat defining an axis, and wherein the axis of the recessed seat is disposed generally parallel to a plane of the bearing surface.

16. The truss shoe of claim 12, wherein the slotted retaining bracket includes a generally J-shaped aperture.

17. The truss shoe of claim 16, wherein aperture includes a recessed seat.

18. The truss shoe of claim 12, wherein the slotted retaining bracket includes a lip.

19. The truss shoe of claim 16, wherein the J-shaped aperture includes a retaining lip formed adjacent a recessed seat.

20. A system for forming a mine roof truss comprising:

a pair of spaced apart inclined bolts;

10 a horizontal bolt having a pair of ends;

a pair of truss shoes, each of the truss shoes including:

a base, the base including a first end, a second end, a curved side, a generally planar bearing surface, and a top side disposed opposite the bearing surface, the bearing surface arranged for contact with the mine roof;

15

a stanchion formed on the top side, the stanchion including an angled bore having a top end and a bottom end, the bottom end of the bore extending through the bearing surface; and

20

a slotted retaining bracket formed on the top side and spaced away from the stanchion;

the stanchion of each of the truss shoes receiving a corresponding one of the inclined bolts;

the retaining bracket of each of the truss shoes receiving a corresponding one of the ends of the horizontal bolt; and

whereby the roof truss is formed upon tensioning each of the inclined bolts and upon tensioning the horizontal bolt.

5 21. The system of claim 20, wherein the horizontal bolt comprises two sections, and further including a coupler for joining the two sections.

22. The system of claim 20, wherein the curved side of each of the truss shoes is arranged to contact the mine roof prior to tensioning the inclined bolts.

10 23. The system of claim 20, wherein the bottom end of the angled bore and the bearing surface cooperate to permit the truss shoe to pivot about an axis disposed perpendicular to the bearing surface.

15 24. The system of claim 20, wherein the top end of the bore includes a recessed seat arranged to permit angular variations of the inclined bolt relative to the truss shoe, and wherein the bracket includes a recessed seat arranged to permit angular variations of the horizontal bolt relative to the truss shoe.

25. The system of claim 20, wherein the bottom end of the angled bore terminates in a slot formed on the bearing surface.

26. The system of claim 20, wherein the slotted retaining bracket comprises a J-shape aperture and includes a spring clip disposed adjacent the aperture.

20 27. The system of claim 20, wherein the first end of the truss shoe includes an edge adapted to bear against the mine roof when the truss shoe is in a first position with the bearing surface disposed generally perpendicular to the mine roof, and wherein the curved surface and the edge are arranged to permit the truss shoe to shift from the first position to a second position in which the bearing surface is disposed
25 parallel to the mine roof in response to tensioning of the inclined bolt.

28. A method of forming a mine roof truss comprising the steps of:
inserting a pair of spaced apart inclined bolts into the mine roof;
providing a cross member having a pair of ends;
providing a truss shoe for each of the roof bolts, each of the truss shoes

5 including:

a base, the base including a first end, a second
end, a curved side, a generally planar bearing surface,
and a top side disposed opposite the bearing surface, the
bearing surface arranged for contact with the mine roof;

10 a stanchion formed on the top side, the stanchion
including an angled bore having a top end and a bottom
end, the bottom end of the bore extending through the
bearing surface; and

15 a slotted retaining bracket formed on the top side
and spaced away from the stanchion;

placing an exposed end of each inclined bolt through the stanchion of a
corresponding one of the truss shoes and positioning the truss shoe in a first position
with the bearing surface perpendicular to the mine roof;

20 tensioning each of the inclined bolts to cause each truss shoe to automatically
shift to a second position in which the bearing surface is parallel to the mine roof;

positioning each end of the horizontal bolt in the retaining bracket of a
corresponding truss shoe; and

tensioning the cross member to form the roof truss.

29. The method of claim 28, wherein the cross member comprises two sections, and comprising the steps of joining the two sections using a coupler, and tensioning the cross member using a hydraulic tensioning unit.

5 30. The method of claim 29, including providing a terminal end on each of the sections, and placing the end of each section in a recessed seat, the recessed seat formed in the slotted retaining bracket of a corresponding one of the truss shoes.

31. The method of claim 28, including providing a retaining a lip on the slotted retaining bracket.

10 32. The method of claim 31, including providing a J-shaped aperture in the slotted retaining bracket.

33. The method of claim 28, wherein the bottom end of the angled bore terminates in a slot formed on the bearing surface.

15 34. The method of claim 28, including shaping the curved side such that the truss shoe shifts from the first position to the second position along the curved side.